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Entered as Second-Class Matter
October 24, 1922, at the Postoffice at
Chicago, Illinois, under the Act of
March 3, 1879. Published Monthly.
Subscription Price \$3.00 Annually.

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PETER'S CHOCOLATE COATINGS



EDITORIAL



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Subscription Price, \$3.00 the year. Single Issues, 50 cents.

**A Specialized Technical and Commercial Magazine for
Confectionery Superintendents, Purchasing
Agents and Executives**

Published Monthly on the 15th by
The MANUFACTURING CONFECTIONER PUBLISHING CO.
30 North La Salle St., Stock Exchange Bldg.

CHICAGO
New York Office, 5 Cortland Street., R. W. Younie, Mgr.
EARL R. ALLURED,
Editor - Publisher.

Come to Chicago May 24-28

There never has been a time in the history of the confectionery industry when there was such an urgent need for a complete mobilization of the manufacturers as the coming national convention of the N. C. A. There has been much good sound serious thought given to the solution of the industry's errors or evils the past few years and out of it all has come a more general appreciation of the common ground which exists between all competitors and the economic importance and significance of group action to the financial success of the individual.

The N. C. A. has shown some great team work the past year and, thanks to the able leadership of its present officers and executive committee, a practical plan for extending and stabilizing the markets for confectionery has been formulated. The majority of the manufacturers, we understand, have endorsed the plan and now the prospect for launching the cooperative campaign this summer hinges on the amount of money represented by the individual pledges which all manufacturers in the confectionery and allied industries are now invited to make. There should be a record breaking attendance at the Chicago convention this year to give this market-extension plan the send-off it deserves.

And remember to bring your purchasing and production executives and take full advantage of the exposition of supplies and equipment which will be held under the same roof at the Hotel Sherman—watch our next issue for full details.

Co-operative Candy Advertising Campaign Making Progress

At a meeting of the Texas Candy Club held at the Adolphus Hotel in Dallas on March 17th, Mr. H. R. Wilson presented the advertising campaign of the candy industry for the Executive Committee of the National Confectioners' Association.

The plan was received with enthusiasm and every member present endorsed the plan, and the club unanimously agreed to forward their pledges to V. L. Price, President of the National Confectioners' Association, by April 1st. Finance Chairmen are being appointed to solicit the allied trade and retail manufacturers, and 100 per cent support is promised from Texas.

With the unanimous endorsement of the Midland Confectioners' Association at their February meeting, the whole Central West and Far Western states present a solid front in backing up the N. C. A. plan for cooperative advertising. The plan is being presented to the Eastern manufacturers this month as per following schedule:

New York, April 6, 7 and 8; Boston, April 9; Philadelphia, April 12; Baltimore, April 13; Atlanta, April 17; New Orleans, April 21; and Memphis, April 24.

Pledges are being received in amounts varying from \$6,000 to \$300, according to size of individual firms subscribing.



The Fight Is On

April 8, 1926.

Manufacturing Confectioner,
Chicago, Ill.
Gentlemen:

I beg to submit a plan for your approval or rejection, subject to any amendment.

All candy manufacturers to adopt a uniform agreement that before selling any jobber any of his make of goods that said jobber must sign an agreement to maintain the resale price that each individual manufacturer sets on his own make of candy. The jobber to also agree not to patronize any manufacturing confectioner who does not adopt a plan of this kind.

The manufacturers and jobbers could have a gentleman's agreement as to what would constitute a uniform price that the jobber should charge the retailer and what price the manufacturer should charge the jobber that would assure both parties a reasonable profit aside from all expenses and depreciation.

This would cut out the price-cutting jobber and he would not be able to purchase any of the staple goods now on the market. The manufacturers who refuse to enter into an agreement of this kind could continue to sell the price-cutting jobbers who refuse to sign and who could not purchase the staple brands, thus, giving them an incomplete line and in the course of time it would be the means of eliminating this class of manufacturer and jobber from the field.

A good attorney could draw up a form contract that would be legal, making the jobber the manufacturer's agent under these conditions in his territory. It will mean organizations of both manufacturer and jobber in each zone and everyone entering into a plan of this kind must be willing to fight to the finish.

NATIONAL CARAMEL COMPANY.
L. G. Burns, Sales Manager.

When the Sales Manager Hollers for New Goods

WHAT HAPPENS? Is there a well organized effort to develop new goods based on intelligent study of sales trends and markets and in close cooperation with the laboratory or research department? Old goods may be revamped or a special sales promotion campaign put behind some staple established item in the line which has been neglected. Or the originality and ingenuity of the technical and practical men in the plant may be called upon to "develop" something new. If so, what's the plan?

This vital subject is discussed by Mr. Jordan from the viewpoint of the individual candy manufacturer and the industry in general.

Looking Ahead—Development In the Manufacturing Department by Stroud Jordan

STYLES change and so does the taste of the multitude. The same piece of candy will eventually lose attractiveness and its taste will become commonplace. We are apt to look for something new, something that is different. A different price oftentimes attracts attention; different sizes and shapes will sometimes make an appeal to the eye which, after all, is a great factor in deciding whether we like an article.

In attempting to meet public demand we are prone to copy some piece which is making a big hit and overlook some individual piece in our own line. Seldom do you find the adventurous type of individual who strays from the beaten path and offers something entirely new. The conservative type manufacturer dooms such products to everlasting oblivion before they get on the market. In any event we have the choice of

Making new goods,
Revamping old goods, or

A carefully planned boosting campaign behind some worthy article in the line which has been neglected.

We further have the choice of doing such work by the "hit-or-miss" route or by a well laid-out and systematic method of development.

The Sales Manager Hollers for New Goods

If we go about the problem in the former manner, the usual procedure is for the Sales Manager to holler for new goods so loud and

so long that the manufacturing end finally tries to quiet him down. The Superintendent gets his orders to make something new and with the aid of a pad and pencil dopes out some new blends which he thinks will be winners. The Foremen, who are generally used in the emergency, take stock of supplies and find they have sugar, corn syrup, condensed milk, cocoa powder, cocoa liquor, fruits, nuts and the usual colors and flavors. The new batch may contain two pounds less of corn syrup, one pound more of condensed milk and an extra pound of granulated sugar; and the same old kettle is cleaned out for the operation. The next problem is finding the desired size and shape, so after long thought the old molds which have been winners for so long are taken down, dusted off and set for molding the starch. The batch is cooked, cast, dried and knocked out. Maybe it is coated, maybe not, but in any event it is passed along to the Powers-That-Be, who will add it to the line in due time, if some hidden after taste doesn't throw it all out. In any event, a piece is finally finished and added to the line.

A Better Way to Develop "New Goods"

A different slant at the same problem is to have the Sales Manager furnish all information the salesmen can gather as to what is most popular in the several territories. After carefully tabulating reports, samples of the several types are gathered and examined in the Labor-

atory. Their several compositions are recorded from which one may determine the products which are used to the greatest extent. With this knowledge several blends may be worked out, always keeping in mind the properties of each material, and such formulas as may be selected should be submitted to the Cost Department for an estimate. One must not lose sight of the fact that an article should not be marketed which will not eventually show satisfactory profits, although this often occurs in the old "hit-or-miss" system of procedure. After we are set, as to materials and price, the size, shape and weight of the product must be determined. Moisture is a big factor and all products must be cooked just right, as well as kept moving until they are cast.

There will follow many problems, such as proper time for goods to stay in the starch, whether a drying room is necessary, the proper temperature for storing the cast goods, how they are to be knocked out, and how handled for coating or packing. Each type of goods presents its own peculiar problems; if the material is to be handled on a slab it will necessarily differ from the cast goods. The one bright spot all through the work is assurance that as time goes on troubles begin to fade out and as experience is gained it becomes easier to manufacture at an increased rate of production, all of which makes the cost begin to shade off quite a bit.

Unfortunately, many items of real merit are left by the wayside and needless money spent in their development. The Management of any plant must visualize the making and marketing of a product from the purchase of raw materials at the right price to the banking of the check covering sales, and they don't always do it. Too often a new article is received with enthusiasm and added to the line to stand on its own legs. If it doesn't sell it is cut off and the whole incident labeled as another mistake and forgotten. Unfortunately the public does not rush head-over-heels for a new item unless there is an apparent reason for the rush. Legitimate assistance is required if you would teach the baby to walk.

Establish a "Development Department"

The establishment of a department, if one does not already exist, where problems may be tried out on a small scale before taking them into the plant is often advisable. This department may be called the New Goods Department, Sample Department, or Development Department. After all, it's not what you call it, but what you do with it that counts. The expenditure of money is neither indicated nor justified unless a definite purpose is in view, the positive outcome of which will justify such expenditure.

Extensive research and development is profitable if utilized as it should be, but it may not be forgotten that expenditure of money in the purchase of equipment and employment of trained service, alone, will not guarantee returns on the investment; the management must direct the scope of such work and utilize results if it is to succeed.

Too often we look around us and see a neighbor making a go of some specialized department or service and go off half-cocked, doing the same thing without first determining whether it is necessary or will be useful in our own particular work. In every case where special research and development is proving of value, and there are countless numbers of such cases, hundreds of problems are awaiting attack. As soon as the one being tackled is finished it is utilized and another started. No problems are handled, the use for which has not been determined; every detail has been tabulated and the value of a solution of the problem is known before the investigation is started.

There are problems worth while attacking from an industrial point of view which also make ideal theoretical, scientific problems; unfortunately the reverse is not always the case. As an example we need but consider metallic lead, whose properties make it peculiarly suited for cable sheaths, battery plates, alloys, paints and many other allied products. Its use is increasing by leaps and bounds, especially since the advent of the radio, and production isn't keeping pace nor is the visible supply of ore increasing. If a substitute can be found or a process discovered whereby the life of this metal will be increased, the yearly savings to its users will amount to hundreds of thousands of dollars. This problem is being attacked in a most painstaking manner; the expenditure of both time and money is justified. If, on the contrary, lead was only a scientific curiosity and had no present industrial applications, the expenditure of time and money by the industries in finding a substitute would be very questionable. Such research would only be justified from a purely scientific point of view.

Any industry may rightfully establish a research and development department and will have need for it only if the industry itself is awake to its own needs and is capable of helping along such work. If, however, the expenditure of money for such work is only to be in style or because some other business is making a go of it, it will be best to wait until the need is more apparent. It would be unfair to all connected with the venture, for work thus started is suffering under too great a handicap, too much is expected of it to give it an equal chance to succeed.

Development and research in the confection-

ery industry is in no wise different from any other industry. It is needed and will be a step in the right direction only if given the whole-hearted support of the management of the business. It cannot work miracles; it cannot put a failing business on its feet, nor can it develop products which will set the world on fire without proper assistance in advertising and selling. This does not detract from the statement that such work is needed and some of the more pressing problems awaiting attack will be given.

Waste Elimination

When the bearings of a machine are run without proper lubrication they burn out, must be replaced, and repair bills mount up.

If sugar is handled in a haphazard manner scrap will increase and waste figures will begin to jump.

Wet and dirty starch will make molds which will not give first-class products.

If belting isn't handled properly it will crack and break.

Improper jacketing of kettles causes steam to be wasted.

An unknown and untreated water supply will frequently cause scale to form in the boiler tubes and steam pipes; this means trouble.

If drying rooms aren't run at the proper temperature and with the right air change, drying time is prolonged and money lost in a slow turnover. There is a right and wrong way to do everything. Are you satisfied that your present methods are the best? Suppose that you could cut your scrap in half by a better method of handling your products; that your belting and repair bills could be materially reduced; that you could get twice the poundage from your drying rooms by determining actual needs and best methods of procedure. Would it be worth your while?

Utilization of By-Products

With the utmost care in manufacture there is always some perfectly good material which falls by the wayside; processes refuse to run perfect. What do you do with your scrap? Is it utilized in products which bring in the greatest returns, or is it put in the first convenient place to hide it?

What kind of water is used for dissolving colors and melting sugar? A very remarkable difference can be noticed in the colors produced when sugar is boiled with different water, and some water will not dissolve certain colors. A general survey of all that is going on may open your eyes.

There may be big leaks in your manufacture and your costs may be cut very materially by some slight changes which may not be obvious,

but which are nevertheless advisable. Maybe you haven't the time to hunt up these details, but it will pay you to put someone on the job who can spot them and after finding them furnish the proper remedy.

Proper and Improper Mixtures

Certain things in handling materials must not be done if you expect to get satisfactory results. A maker of hard candy doesn't have to be told about adding citric acid to his cook before he boils down in the vacuum. On the other hand, acid fruits are often added to fondant on the remelt and little or no consideration given to melting temperatures and time used in the operation of casting.

No experienced marshmallow or nougat maker would attempt to dissolve dry albumen by boiling it with water, but many of them add it to the cook at a temperature high above the coagulating point of the albumen. If the nougat is to stand up it may be necessary to heat the batch high enough to coagulate the albumen, but this can be done at the right or wrong time, according to how much is known about handling this material.

It isn't well to add milk or gelatine to a cook which is too acid in character. Acid will curdle the milk and destroy the jelly strength of the gelatine if in too strong a concentration. There are many incompatibles in confectionery manufacture, just as in every industry, but the foregoing illustrations will serve to show the general character of such mixtures.

Shelf Life and the Proper Package

All confectionery, or the greater part, is perishable. Changes take place; sugars slowly invert in acid goods and become hard and gritty in goods which carry too much granulated sugar; nut meats become stale after awhile; milk products will not keep indefinitely; even hard candy will grain out in time and lose brilliancy; flavors become old and colors fade. How long will each piece of candy keep? Many products are held out of certain localities, at least a part of each year, because humidity and temperature conditions aren't satisfactory. The proper moisture content in the finished product and a container which will protect against humidity and temperature changes may make it possible to ship these same goods at any time and to any locality. Have you kept a list of seasonal items which give trouble in certain localities? Have you a list of returned goods, listed according to complaint, location and customer? Just how much has been done to remedy conditions?

New Uses for Old Products

When an attempt is made to sell an article it is generally done with some definite purpose, some definite use in view. Perhaps the same

product may be used to meet other demands which will create new channels for distribution. Have you ever seriously considered what each product you sell can be used for? Is there a use for those lovely sugar creams you make other than to decorate a cut glass dish on the side-board of some dining room? Perhaps they would make ideal garnishings for birthday and wedding cakes. Maybe they could be chopped fine and used for a salad or ice cream topping. And again it might be better to remelt these creams for icing, when Mother wants to make the Sunday cake, than to try and make an icing from sugar and water with the usual questionable results. If such possibilities were set forth in clear terms perhaps new uses as well as new users might result. Just because we do a certain thing at a certain time in a certain way it doesn't follow that this is the best method. It may cost some healthy arguments to convince the so-called stand-patters or bulwarks of progress, who have gone as far as they believe expedient and who look askance at new departures, but remember that business is a

treadmill and if you don't keep stepping you will surely go to the bottom.

Development Possibilities

The field for scientific development in the confectionery industry is practically unlimited. On every hand problems are staring us in the face. Results of systematic investigations may result negatively and this is to be expected, but a "don't" is worth as much as a "do" if it isn't forgotten. As to whether a Corporation or Plant will make a go of development and research will depend entirely upon the foresight of the Management. It is their duty and privilege to direct and pass upon work done and if they aren't in sympathy with such work or do not realize how such work should be done it will be vain to attempt to get results, no matter how much money may be spent. To those who are capable, wise and willing to go ahead such work will be profitable. The problems are at hand; the men to solve them may be had. It is up to each individual company as to what will be done.



Showing Part of Experimental Candy Laboratory for Batch Size Tests and General Development Work.

Wanted: A Factory Superintendent for Medium Sized Confectionery Plant

by A Close Observer

NOT long ago a vacancy occurred in the superintendency of a moderate-sized plant near New York. The firm decided to fill the position from within the organization, promoting a man who had been with the company a great many years. This man proved a failure, however, because he had neglected while assistant to learn many essential details. Apparently it had never occurred to him to prepare himself for a higher position. Whenever any question arose he had depended entirely on his superior's knowledge and judgment. The result was that when workers came to him with problems after he was promoted he could not answer their questions, as he did not have his old boss to fall back on. Unfortunately, he was ashamed to admit lack of knowledge or apparently did not realize the situation, and endeavored to pass it off by telling the workers that that was their job and not to bother him with such details.

If he had shown a disposition to study and to learn it would not have been so bad. To make matters worse, the new position, with its added authority, went to his head, and he began to be domineering and rather officious in his attitude towards workers, hoping perhaps to bluff it through. It did not take the firm long to realize the mistake made in promoting him and he was allowed to resign.

Why Good Foremen Don't Always Stay Promoted

A similar instance is the case of a foreman in a department in another plant who had been successful there, principally because he had long experience and was thoroughly versed in the details of the operation of that one department. A very likeable man, with the respect of the other foremen, his associates were glad to see him receive the promotion. Things went along very well for a while. He was sincerely trying and encountered no serious difficulties. Also he had the cooperation of the other foremen and the workers, with the result that, when he did make any mistake, his friends in the organization would help him cover it. As the busy season approached, however, there were more and more details to be handled, and work had to be pushed through the factory in larger quantities.

His lack of executive ability began to show up rather strongly. It was impossible for him to carry many things in his mind at the same time. He did not know how to analyze the orders ahead of the plant, anticipate delivery requirements, and see that work was properly planned and laid out. Neither could he keep all departments of the plant running smoothly and the working schedule properly balanced. It was simply a case of the job being too big for him. His capacity did not equal the requirement of the work. The situation soon reached such a state that it was necessary to displace him and put him back on his old job. This caused the men in the plant who were still loyal to feel that he had been treated unfairly.

Another Unwise Selection in the Same Plant

Strange to say, the firm—which was then in the hands of a group of financiers—did not do much better in selecting the next man. The second selection was a man with a rather large reputation as an organizer and as an executive. He came in with considerable flourish—everybody expected great things to result from the re-organization which the plant would undergo while he was there. He immediately began to install systems, get out a new adjustable organization chart, in order that everybody might know just where they fitted and to whom they were to report. He made a daily practice of walking through the plant, checking things up, and requiring that all mail be sent across his desk. He succeeded in making himself generally disliked for his officiousness and attempt to show the members of the organization how they should do their work. The first result of this new man's advent was to kill all initiative. When anyone suggested a plan he had an improvement to add. Department heads were required to consult him before making any change or important decisions. In consequence no one felt free to go ahead on his own responsibility. This occasioned much delay as department heads lost much time waiting for an opportunity to see him. It soon developed that this man had no real judgment regarding the operation of a candy plant; his instructions were frequently wrong, and the statement at the end of the year showed that he had not been as success-

ful as anticipated. Apparently he had installed so much system that the plant had little time to sell candy. At least they carried over a rather large inventory, which caused the financial interests to accept his resignation.

Then They Tried a "Slave Driver"

As is usually the case with non-resident management, particularly by banks or financial interests that know little about the details of a business, they went to the other extreme in selecting the next superintendent, choosing a man from another type of plant. This man was of the old slave-driver generation, with absolutely no use for system. He believed in getting results by sheer force and by controlling people through fear. The plant now is badly disorganized. He has taken the heart out of those who were conscientiously trying to do good work. Several of the better men refused to put up with his domineering attitude and secured positions with competing concerns.

Perhaps the most frequent reason for failure on the part of superintendents is their lack of ability to control workers and to insist on their organizations getting out the work desired. Frequently in order to strengthen themselves with workers they become too familiar, losing the workers' respect. Again, they slacken on quality and are unable to make employees turn out as much quantity as they should.

Another instance of failure is the case of a superintendent who was hired to run a certain plant and failed because he did not know his costs. Unfortunately, the firm did not have an accurate cost system. They had to depend entirely upon the superintendent's statement as to what different lots would cost him. He made his figures up on the basis of estimates as to what the various combinations would cost if everything were running smoothly. In one case he even went so far as to assume that, if he placed his costs down low enough, the plant would secure a sufficient volume of business, so that he would be able to show a profit. On the basis of this suggestion the firm made a low price and did secure considerable volume, but even with increased poundage his cost, plus overhead, exceeded the selling price. Needless to say, the day of final reckoning came and the firm realized that the superintendent was merely guessing at his costs. As the season's business showed a loss he was soon looking for another job.

Another superintendent of the same type as the last one was a man unable to keep his operating expenses within his own estimates. He always had some excuse for spending more money than originally planned, using as an

"alibi" some unexpected mishap or some special need, resulting from increased business. Furthermore, his plans were frequently too elaborate and at times he led the firm into spending more money than was necessary to take care of rush business. This could have been avoided by planning his schedule more carefully, arranging to work overtime, or adopting any one of the expedients with which it is possible to increase output.

Ruined by Prosperity!

Still another man who failed as a superintendent made good at first through hard work, winning for himself the unqualified commendation of his superiors. Along with this commendation came an encouraging increase in salary. Apparently he "could not stand success," for he began to lose interest in his work. Frequently when he came to work his mind was occupied with outside affairs. Instead of saving his increase in salary, he spent it on more and more luxuries. Gradually he began to get fat and lazy and somewhat supercilious in his attitude towards his assistants. The quality of the work in the factory began to fall off and he did not seem to realize that he was losing his grip. One or two serious situations arose in the plant, due largely to his own careless supervision. He sought to cover these up and keep his superiors from knowing that certain members of the firm had been insubordinate and were not heeding his instructions. After about two years of this the firm realized that another good man had been spoiled by prosperity and was forced to replace him by someone else.

It would not be difficult to build up a long list of the reasons why superintendents have failed. The principal causes might be summarized, however, under the following headings:

Ignorance and lack of thorough preparation for the job as foreman.

Failure to realize that a superintendent's real job is to organize and lay out work so that it will be done promptly, on time, and control the workmanship in the plant so that candy of uniform quality will be produced. Many men who might otherwise make good superintendents lack forcefulness and energy. They are unable to hold their organization within bounds and to maintain sufficient pressure to insure that the work is done as directed. Either they lack courage or fail to appreciate how slack they are. Of course, there is the type of man who lacks force of character and tries to make it up by being blustering and domineering in his attitude. Such a man only irritates without securing results.

Cost Fundamentals

An Interview by Ralph Wells with

J. Karl Mason

Treasurer, New England Confectionery Co.

IN DISCUSSING the problem of cost accounting as applied to the candy industry it is far more beneficial to set forth fundamental principles than to waste time describing details. Routine methods will necessarily vary from plant to plant, and for this reason discussions of their relative merits are apt to be confusing, as each person is thinking in terms of a different plant. A method which has proved effective in one factory might be impractical in another. Thus, we are apt to waste time disagreeing over relative unimportant items instead of reaching constructive conclusions on principles applicable alike to all plants.

We should bear in mind also the fact that in recent years so much emphasis has been placed upon the importance of cost keeping that many fail to realize that cost accounting is a means and not an end. It is really a statistical supplement to the operating statement, an explanation of how and why and where moneys have been paid out, expressed in terms of product units. The cost system is merely one part of the general accounting system and is used to allocate and distribute to the different product items, in just proportion, all of the money expended by the company.

While "costs" are essential, our interest in them should not blind us to the fact that the really important thing which we are after is the determination of earnings—the excess of income over expenditures and the comparative degree of efficiency shown in securing the maximum utilization of our total capital. "Costs" tell in terms of product units what our expenses are and why we are making more or less profit on the various items of our line. To the average candy executive it is of greater importance that he know also what success the company is having in securing the greatest capital turnover per year and in extracting from each turnover the maximum margin of profit consistent with safety and good business. It is the margin of net profit multiplied by the number of "turnovers" that determines the earnings for the year.

Furthermore, there is a tendency for manufacturers, both large and small, to go so far in their search for short cuts in cost keeping that they fail to get the whole truth regarding the

total expense involved in the manufacture of each item produced. It is highly important that cost keeping practices be simplified and any needless red tape be avoided. Yet there are certain minimum requirements which must be observed if the manufacturer wishes to avoid the danger of cost figures which do not include all of the expenses involved and, therefore, deceive the manufacturer into thinking that certain items are costing less than they do. Partial costs are dangerous and conceal losses that may be steadily eating away the financial foundation of the business. This leads us to one of the most vital principles.

Minimum Cost Requirements

In order to accomplish this, an effective cost system will necessarily include some method of collecting and distributing:

- (a) Direct material costs so that all material used will be fully accounted for and each class or variety of candy will be charged with all of the material used in its manufacture, including waste and spoilage.
- (b) All direct labor costs charged to the kind of candy which is produced by that labor. Where an employee or several employees are working simultaneously upon more than one kind, an equitable method must be found for apportioning the cost of this labor.
- (c) All indirect labor and indirect material costs distributed equitably among the various items produced.
- (d) All other forms of factory and manufacturing expense distributed fairly, so that each class of goods will bear its share.
- (e) All costs of packages and packaging, packing and shipping expense.
- (f) All advertising and sales expense charged to the respective classes of goods sold.
- (g) All other current expenses of any nature whatever, including bad accounts, return goods, taxes, insurance, general office expense, administrative expense and that long list of miscellaneous expenditures.

Any cost system which does not provide some means of including all of the above in the cost of each grade or class of candy manufactured is inaccurate and failing by just so much to give a true picture of the gross cost of each item.

Until a manufacturer has this total gross cost he is not in a position to set his selling price intelligently.

It is particularly important that the smaller manufacturer should compute his gross costs accurately because his selling expense and his general overhead (mentioned under item "g") is in danger of being proportionately greater for each item than that of the larger manufacturer. Because he does a smaller volume of business, the small manufacturer will frequently have to add a larger percentage for selling expense and general overhead. This is a point which many fail to appreciate fully. They seem to think that because a large firm spends such large sums that it will naturally have to charge a higher rate of overhead. This is not necessarily so. The question becomes one of always comparing sales to expenses. In the case of large manufacturers the volume of sales is so great that many large (?) expenditures shrink into insignificance by virtue of greater sales volume.

The detail methods used to bring all these cost items together and to subdivide them is not of great import so long as it accomplishes the results accurately and with a minimum of expense. In expressing the cost of any one item it is an advantage to maintain the subdivision used above and to give both dollars and cents and percentages thus:

Cost of Grade "A" Mixture:

Material
Labor
Package
Factory Overhead

Prime Cost

Shipping
Sales
General Administration

Gross Cost

During recent years many firms have worked out a method of establishing a "standard or predetermined cost" which enables them not only to estimate with a remarkable degree of accuracy what a given variety will cost, but also to establish a basis for their financial budget. Furthermore, once an accurate standard

cost has been established, it serves as a gauge or standard by which current operations can be measured quickly and easily. By checking daily costs on any item against the standard it is easy to determine whether or not a given department is operating with its usual efficiency. Such a check serves as a guide, and any marked variation from standard serves as a danger signal and enables prompt steps to be taken to correct any unsatisfactory condition. This method gives a remarkably sensitive control over costs and manufacturing expenses.

These standard costs must be arrived at by careful analysis and checking of past experience together with the use of time studies.

One point which puzzles many is the method to be used in distribution of overhead. It is not possible to set forth any hard and fast rule as to just how this should be done, except to say that it may be necessary in a single factory to use several different methods of distributing overhead, depending upon the type of work. The rule is to select whatever method will give the most equitable distribution according to method of production and type of product. In departments where there is a great deal of machine work it may be simpler to figure the cost on the basis of machine hours. In rooms performing all hand work, distribution on the basis of labor hours might be more practicable, while in rooms where a large volume is put through, using both hand and machine labor, distribution on the basis of poundage or some unit of product may prove the most satisfactory. The method selected must depend on local circumstances and is never to be made on the basis of an iron-clad rule.

In all activities of a cost system, common sense and careful analysis of prevailing conditions are the factors that must govern the method adopted.

Preliminary to a successful cost method, a carefully created schedule of accounts becomes a necessity. Such a schedule constitutes a standard by which all income and expenditures shall be allocated. It automatically groups the essential figures in a manner suitable for further analysis, into the details demanded by the system of cost analysis. Such a system of account classification, created as an example, will be given in future articles.



Microorganisms in the Manufacture of Confectionery

A Survey of the Bacteriological and Sanitary Hazards Which Jeopardise Both the Individual Business and the Industry

by Margaret B. Church and J. Hamilton

*Of the Microbiological Laboratory and the Carbohydrate Laboratory, Bureau of Chemistry,
U. S. Dept. of Agriculture*

A special investigation in cooperation with a number of confectionery manufacturers representing different types of candy factories—from the small manufacturer, occupying a “loft” in the average old factory building to the larger manufacturers in this industry who have comparatively new plants of modern sanitary construction built specially for their exclusive use. The latter are far from being immune from bacteriological troubles of serious consequences, notwithstanding their beautiful vermin-proof, daylight factories!

This investigation is part of an extensive program, initiated by The Manufacturing Confectioner, to raise the quality standards of the industry. The data in this article and also material on the care of Confectioner's Machinery in the February issue are part of special studies being made preparatory to the drafting of a code of cleanliness and sanitation for the confectionery industry.—Editor

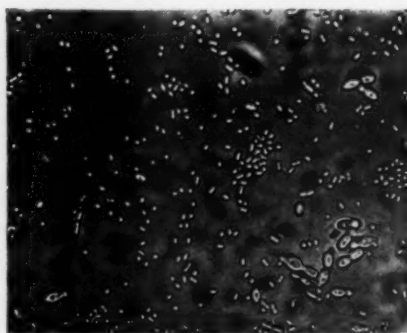
THE universal consumption of confectionery by people of all classes and all ages causes the public to have a real interest in its purity and safety. For the most part, candies have always commanded a large degree of public confidence. Their sale and consumption is very largely based upon their appearance and flavor, which are generally believed to reflect closely the ideals followed in their production. The occasional occurrence of bursting and cracking in candy of certain types, therefore, brings the immediate rejection of the confections involved. Such rejection is a serious embarrassment and loss to manufacturer and dealer. A consideration of the materials and methods used in the factory may, therefore, be significant.

Sanitary Hazards in Candy Manufacturing

Among the materials used in candy making

establishments are water, cane and beet sugar (granulated and pulverized), corn syrup, invert sugar syrup, gelatine, egg albumen, nuts, and fruits (both dried and processed), starch and flour, and sometimes powdered milk. As supplied under modern industrial methods, the primary ingredients—sugar, corn syrup, and water—are free from objectionable microorganisms in appreciable numbers when received by candy manufacturers. The sanitary hazards revolve largely about the secondary raw materials and cleanliness of factory equipment.

Confections are of necessity subjected to more or less handling after the completion of cooking and boiling of the syrups. Those food products subjected to complete sterilization as the final step in manufacture are not open to the avenues of contamination peculiar to confections. It is necessary, therefore, to discuss in



Actively growing yeasts and bacteria.
Magnification X 500

some detail the processes and methods in candy manufacture as specific avenues through which contamination is likely to enter.

Water

A city water supply is usually acceptable for the purposes of food manufacture. In case the water supply is not controlled by appointed authorities, it is well to have both bacteriological and chemical examinations made by competent consultants. Water fit for drinking presents no difficulties when added directly from the faucet to the batch of candy. Water is added to the fondant and cream, however, at other times when making up the batch. It is added to "slack back" and from the surfaces of wet hands and utensils. Such water, while it need not be sterile, should always come directly from the source of supply. It is unsafe as well as unsanitary to use the water from buckets, where utensils are kept wet, as an integral part of fondant or of candy of any other type.

The risk of using anything but clean water, especially after the period of boiling is past, may be illustrated by the following bacteriological analyses (made with the assistance of H. C. Colson, Jr.) of four samples of wash water from candy factories in operation during the past year. These figures have no quantitative value, but they have a relative value when compared with one another. They indicate that wash water was used instead of fresh water, drawn directly from the faucet. In sugar factories where automatic washers have not been installed the same information may be obtained by analyzing water used for washing sugar at

TABLE I

Sample No. and Source	Yeast per cc. a 26° C. in 48 hrs.	Bacteria per cc. b		B. coli. c
		20° C. in 48 hrs.	37° C. in 24 hrs.	
06a: Used for wetting hands near glucose..	203,000	2,400,000	310,000	1
06b: Used for wetting shovel and knives....	More than 3,000,000	13,300,000	3,600,000	More than 100
07a: Used for wetting hands near glucose..	More than 3,000,000	80,000,000	95,000,000	More than 100
07b: Used for wetting utensils	More than 3,000,000	27,000,000	6,800,000	More than 100

- a. On wort extract agar containing 30 parts soft sugar.
b. On dextrose agar.
c. Carefully confirmed by usual tests.

the centrifugals. In one such instance¹, yeasts were present in large numbers in the least objectionable water container in the factory; the bacterial count in the same container was 10,-

¹ Church, M. B. Bacteria in Sugar Cane Products. Sugar, v. 23, No. 8, p. 412-414, Aug., 1921.

² Kopeloff, N. and L. The deterioration of cane sugar by fungi. La. Bull. 166, p. 42, Feb., 1910.

440,000 organisms per c.e., while gas produced

by bacteria was shown in tests of $\frac{1}{2}$ c.e., 1 c.e., and 10 c.e., samples.

Sugar

White sugars are comparatively free from microorganisms because of the manufacturing process, although sugars of the purest grades have a syrup film of relatively low density about the sugar crystals, and, therefore, a greater natural tendency to undergo fermentation than a sugar with more non-sucrose solids in its syrup films.² Candy manufacturers have little to fear from such sugar as a source of contamination. The few microorganisms in white sugar are introduced as it is carried from the centrifugals in conveyors to the granulator and drier. In one case, standard granulated sugar gave a count of 900 bacteria per gram at the centrifugal basket after spinning, and in the same factory at the same time sugar from the carrier trough gave a count of 46,000 bacteria per gram. The bacteria in the cases cited were miscellaneous bacteria, obtained on media suitable for omnipresent bacteria, and not those having a particular relation to health and to sugar spoilage. Vegetative and non-resistant microorganisms acquired in conveyors or carriers in refineries are undoubtedly killed in the granulator, but the fate of resistant bacteria is unknown.

Corn Syrup

Confectioners' corn syrup is not in general a source of contaminating organisms as it is received by the candy manufacturer. It has a density which, although not destructive for all sugar-tolerant yeasts, is scarcely conducive to fermentation. As a rule, the containers in which it is sold do not lead to contamination or subsequent fermentation.

Egg White and Gelatine

The principal ingredients of fondant which could furnish anaerobic spore-forming bacteria are egg white and gelatine. When these are used they are incorporated into the fondant at a temperature much lower than the thermal death-point of anaerobic spore-bearing, gas-forming bacteria, such as *Bacillus* (*Clostridium*) *butyricus* and *B. welchii*. Dried egg white imported from China may contain as many as a million spore-bearing, gas-forming bacteria per gram, as well as many millions of other bacterial forms per gram. The spores of the spore-bearing bacteria are protected by a heavy wall, in which form they survive in a dried product where they cannot grow. Their tolerance for sugar syrups of high densities is not known.

Fruits and Syrups

Crushed fruit syrups used as flavoring and fruit in syrups may easily be a means of contaminating candy with yeasts, provided the final syrup is not heavy or provided the fruit was

not carefully treated in the thinner syrups during processing. Unstained yeasts and yeasts stained with the dye permitted in fruits have been observed in processed cherries and in cherries from cream-center chocolates. The stained yeasts were actively growing in the cherries at the time the dye was added to the fruit. The presence of the unstained actively growing yeasts indicates that the cherries in syrup were held in too thin a syrup before being used in candy making. Cherries in syrup which was said to contain 1/10 of 1 per cent benzoate of soda were not free from active yeasts, as evidenced by the development of bubbles of gas when the container was opened and by the results of a microscopic examination of the cherries and the syrup.

Raisins probably always contain yeasts, owing to the method of curing. Actively growing yeasts are commonly found in fragments of raisins and in whole raisins taken from cream centers.

The yeasts and bacteria noted by us with the aid of the microscope in cherries and raisins and in the fondant of cream centers are never evenly distributed. They are in clumps or foci. The same condition is found by careful observation in all concentrated foodstuffs. The texture of a product like a cream center is very uneven microscopically, because during the process of manufacture its ingredients are stirred and heated. In one place a minute mass of heated egg white is found; in another starch grains are more conspicuous; in another sugar crystals predominate; and in another the mother liquor bears a different relation to the crystals from that in a neighboring area. Thus, some spots, in a cream center are more favorable to yeast and bacterial growth than others. As this means that not every minute fragment examined will show microorganisms, the microscopic examination must be very painstakingly made.

Starch

Starch and wheat flour used in shaping hand-rolled creams and on the molding boards carry bacteria and mold spores. In the hand-rolled creams these organisms are distributed rather generally throughout the fondant with the starch. In cast centers the presence of starch is less negligible than is commonly believed by the trade.

Starch from molding boards is not included as an ingredient of cream centers in any formula; yet, as an agent in the technique of casting centers, it is unavoidably incorporated into the cream center. The mouths of the depositor, when set too near the starch bed, become dusted and even coated with starch, which may flow off with the fondant in little masses into certain cast pieces. Even a proper setting of the mold-

ing boards and outlets from the depositor cannot keep starch from adhering to the outlets, if the molding boards are filled too high or their edges are imperfectly leveled, because of imperfectly set or old worn brushes.

It is the practice to use starch again and again, adding new starch to replenish the supply and to reduce the proportion of foreign particles, etc. The number of organisms present in the starch may be reduced in the drying room in those instances where the actual temperature reached in the trays, combined with the moisture of the air, is destructive to yeasts and bacteria. The incidental or actual sterilizing effect of drying rooms on moulding starch in boards has yet to be investigated. The thermometer on the wall inside the drying room does not record the temperature in starch beds on boards at different levels or in different parts of the room.

Mechanical cleaning of casting starch has its value in the technical operations of candy making. Its principal value should be the removal of tailings. No particles of other foreign material big enough to remain in the sieve should ever be allowed to enter casting starch. In other words, floor sweepings of starch should not be used until methods for the chemical and mechanical cleansing and sterilization of starch far different from those practiced today are developed.

Dried or powdered milk contains very few microorganisms, because the milk is generally pasteurized before drying and organisms cannot grow in the product. The bacteria which remain after the drying is completed die off gradually. Rancidity in dried milk is a form of deterioration commonly not due to the growth of microorganisms.

Equipment

Clean factory equipment is also essential as an aid in keeping microorganisms out of fondant and cream. Cleanliness of equipment helps to produce a class of merchandise having a good appearance and a clean taste, free from off flavors. It is very difficult to trace fermentation in candies to any particular raw material or to any particular factory condition. Often a factory does not ask for scientific assistance until the objectionable materials have been removed or the faulty practice has been discontinued. The same difficulty is encountered in dealing with the spoilage of other food products. Our observations on the production and deterioration of foods, especially such concentrated foodstuffs as molasses, sugar, jellies, cover a period of more than ten years and justify conclusions, even when complete evidence is lacking.

Floors, Walls and Ceilings

Surfaces in a plant manufacturing sugar products should not absorb and retain moisture.

Porous flooring absorbs syrup from spilt sugar, glucose, and fondant and becomes impregnated with a syrupy solution as scrubbing with water spreads the sugary products over and into it. When insufficiently drained and mopped after scrubbing, such floors offer a suitable medium for the growth of molds and sugar-tolerant yeasts and bacteria. Such a floor when dry spreads contamination, because the dust and minute fragments splintered from it by wear rise with the passage of employees, trucks, etc., bearing with them the yeasts and other organisms which have developed under the moist conditions. Thus, the air in a factory with such floors becomes a hazard.

Rough walls, walls with scaling paint, and splintered floors hold dust, starch, and fine sugar particles, so that they are particularly objectionable in starch rooms. Such particles, which attract water readily, become suitable places for the slow growth of yeasts, especially in those sections of the country where the atmospheric humidity is high.

Clean Off Caked Fondant, Etc.

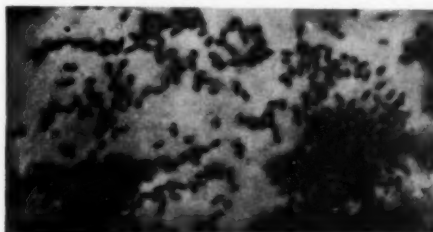
As currents of air from the windows dislodge this factory dust, the soundness of the candy undergoing production is endangered. Similarly the caking of fondant about the kettles is a menace, as it dries out and flakes off. The general practice is to clean the inside of kettles each day or even between batches which are differently flavored or colored. The mechanical parts of equipment, the supports and bases of kettles, the adjacent walls, and the windows should be kept free from old caked fondant and chocolate, for the reasons just mentioned.

Sterilize Utensils

Buckets, basins, or other containers used for the wash water necessary for moistening hands and utensils, such as spades and paddles, should be made of metal, as wood absorbs sugar solutions. The figures on the microbial content of wash water indicate the risk of yeast contamination from this source. A metal container

can be much more readily cleansed than a wooden bucket. Live steam is the best sterilizing agent. Dry live steam adds less moisture to the atmosphere of the plant than wet steam and the surfaces being cleansed dry more quickly when it is used. The use of live steam for sterilization affords little opportunity for the absorption of water by sugar materials. This is nowhere more readily appreciated than in a bacteriological laboratory where confections are analyzed and culture media of high sugar concentrations are prepared. In small factories where steam is not always directly available from pipe lines, the hottest water procurable with soap or cleaning compounds should be used. Provision should be made for scalding all implements, including the wash buckets, between each batch. If the boiling section and starch section of a plant are in one unpartitioned room, raw materials, such as dry cherries, confectioners' cocoanut, and dry raisins are subjected to excessive exposure when left open on benches or in boxes on the floor for long periods.

Essential cleanliness is far more important in preventing contamination of confections and fermentation of chocolate-coated cream centers than obvious cleanliness. *Attractive appearance resulting from highly polished surfaces and conspicuous sanitary construction does not necessarily mean cleanliness, biologically speaking.* Intelligent supervision of the handling of the unfinished product and of properly prepared raw materials, such as fruits, nuts, and flavorings, will lead to the production of sound confectionery. Consumers are justified in asking that the raw materials which enter unprocessed foods shall be clean and sound and handled in a cleanly fashion. The presence of sugar-tolerant yeasts in avoidable numbers in confections often causes a severe financial loss. Sugar-tolerant organisms become an increasing menace in chocolate-coated creams in direct relation to the increase in numbers and to the time elapsing between manufacture and consumption.



Active vegetative bacteria.
Magnification X 1540

Candy Cost Finding

—in three parts—

The Factory Ledger

The second of a series of three articles on Candy Cost Finding and Accounting

By Deane M. Freeman

General Manager, F. H. Roberts & Co., Boston
Manufacturers of "Apollo" Chocolates

ALTHOUGH cost finding may not be as exact a science as mechanical or electrical engineering, nevertheless, for all practical purposes it is possible to secure sufficiently accurate results. At best, however, it is possible only to secure an approximate distribution of the various overhead items plus a more exact division of labor and material against the finished product. It would, of course, be possible to make these distributions so accurately that the results would be scientifically exact, but neither the additional clerical labor and detail required for such "hair-splitting" nor the additional expense incurred is justifiable. The result would be an unwieldy and cumbersome system.

Since "costing" has not and cannot be reduced to a science, it is necessary to accept those rules which have been developed from experience and used by the best accountants during the last twenty or thirty years. These rules are based on good common sense rather than on theory. They give excellent results and are perfectly safe to follow. Of course, there is some difference of opinion on relatively unimportant questions, such as the correct distribution of various items of overhead. Probably if a list of overhead items were submitted to ten leading cost men no two of them would distribute each item in exactly the same way, but in the final analysis the difference would be so slight as to be negligible.

In fitting a cost system to a plant it is essential to consider the size of the plant. Details which are large enough to be handled separately in a large factory may often be treated en masse in a smaller organization. For example, in a large establishment it would be entirely feasible to meter the gas used by each department and thus be able to charge each division of the business with the exact amount of gas consumed. In a small plant, however, (as suggested in last month's article) it is more practical and sufficiently accurate to apportion the gas consumption on the ratio of pipe diameters multiplied by the hours used. This gives a rough approximation but is much better than charging the gas into general overhead.

Cost figures, to be of real value, should be reported promptly within a short time after goods have been produced. Naturally, it is much better to have a simple system which is up to the minute rather than one so loaded with detail that final figures are completed many weeks too late. It is only by such approximation as has been indicated that the moderate-sized plant can develop a cost system sufficiently easy to keep up and which will give the desired results regularly and promptly. If a cost department is allowed to go into too much detail, the system will become so involved that the operating statements cannot be brought out until long after they are due. There is a serious question

BURDEN ACCOUNTS	OTHER EXPENSES TO BE INCLUDED	BASIS OF DISTRIBUTION
A. NON-PRODUCTIVE LABOR	None.	Against incurring department
B. GAS	If bought—none.	Diameter of pipe × hours used.
C. ELECTRIC POWER	If bought—none. If made—share of power house expense.	Horsepower hours.
D. ELECTRIC LIGHT	If bought—none. If made—share of power house expense.	Kilowatt hours.
E. WATER	None.	Estimated gallons.

F. REFRIGERATION	Wages and expense. Share of steam or electricity. Rent. Water. Machinery depreciation and expense.	Square feet of floor space of rooms refrigerated, plus allowance for temperatures and number of people employed in department.
G. STEAM POWER	Wages and expense. Fuel. Share of water. Share of rent. Machinery depreciation and expense.	Ratio of total pounds cooked in various departments.
H. RENT	Building depreciation. Repairs to building. Watchmen. Sanitation. Taxes building. Insurance. Elevator men. Heat.	By departmental floor space.
I. MACHINERY	Repairs to general machinery. Depreciation of machinery. Equipment taxes—if any. Mechanical salaries. Machine shop less direct charges to department.	By departmental value of machinery.
J. GENERAL FACTORY	Unassigned floor space (rent) as hall, toilets, etc. Share of water. Share of management salaries. General factory supplies and expense. Uniforms and laundry. First aid. Cafeteria profit or loss. Employment office. Employees' liability insurance. Raw and finished stock. Inside trucking. General helpers. Public liability—(listed through error in last month's article under sales expense).	As a percentage of departmental productive labor payrolls.
K. SHIPPING	Rent. Wages and expense. Cases. Refrigeration. Supplies. Out freight.	As a percentage of sales dollar.
L. ADMINISTRATIVE	Share of management salaries. Share of legal expense. General office salaries. Office supplies. Audits. Rent. Depreciation of equipment. Ledger expense.	As a percentage of sales dollar.
M. MERCHANDISING	Sales executives' salaries. Salesmen's salaries and commissions. Share of general office. Advertising and dealer service. Returns and allowances (as a deduction from gross sales). Share of legal expense.	As a percentage of sales dollar.

general minor items as oiling, together with lost or unaccounted for time, which may properly be charged against the machinery account.

- J. **General Factory.** This account is a catch-all for expense items which it is impractical to allocate directly or are so small that it is inadvisable to attempt to distribute in more detail.
- K. **Shipping.** Where a product is shipped in case lots it is better to charge the cases directly into the cost of the goods. If the majority of the shipments go out in broken lots it is better to put the cost of the cases into the shipping account. The charge for out freight may be included in this account, or again, in case lot shipments, it may be charged directly against the product on the basis of poundage.
- M. **Merchandising.** The item of returns and allowances should be a small one, and if so it is relatively unimportant. When returns or allowances are necessary, because of the poor quality of a shipment, the charge should, of course, be against the factory. More fre-

quently, however, these are matters of sales policies and expediencies, and as such should be deducted directly from gross sales and charged against sales expense.

The following illustrations are examples of the burden account, showing, first, an imaginary refrigeration account, and then the general factory account. At the top of each sheet the expenses are collected and totaled and compared with the average monthly expense for the previous year. Below this is shown the percentage of distribution to each department.

The Productive Department Accounts

The next step in the development of the factory ledger is to open the productive department accounts. These are the departments in which actual production takes place such as Cream and Mogul, Spinning, Dipping and

General Factory Expense				
Year 1925 Monthly Budget Jan 1926				
1	Cafeteria (Rent)	112554	9379	9768
2	Rent	675319	56252	58685
3	Cafeteria (Steam)	14720	1227	1436
4	Heat	19230	1602	1837
5	Cafeteria (Gas)	5444	454	605
6	Water	41712	3476	2350
7	Electric Power	2607	217	262
8	Management Salaries	631258	52604	58394
9	Manufacturing Office	689033	57461	56064
10	Cafeteria Loss	44995	3750	3357
11	Liabilities Insurance	189039	15753	11450
12	First Aid	85857	7155	7439
13	Uniforms & Laundry	88626	7355	5677
14	Help Adv	1785	149	-
15	Gen. Fact. Rep. Exp.	336072	28006	24561
16	Machinery	258152	21513	23365
17				
18	Total	3196593	266883	265233
19	Distribution:			
20	Hard Candy	232007	19334	24136
21	Cream & Mogul	303264	25272	23340
22	Caramel & Nougat	114292	9524	12200
23	Enrober	306798	25566	24402
24	Tray Packing	1331525	110961	98667
25	Bulk Packing	134999	11250	13262
26	Bon Bon	60943	5079	4507
27	Hard Dipping	663344	55200	61003
28	Ribbon	49419	4118	3714
29				
30	Proof	3196593	266883	265233
31				
32				
33				
34				
35				
36				

Hand Dipping

		Year 1925	Monthly Budget	Jan. 1926
1	Rent Burden	152100	12675	13200
2	Cooking Steam	53115	2760	3230
3	Heating Steam	4274	357	417
4	Refrigeration	362591	30246	27223
5	Electric Power	24292	2025	2439
6	Dipping Plagues	61033	5086	
7	Machinery	309781	25815	28038
8	Non Prod Labor	717390	59752	47545
9	Gen. Factory Exp	663444	55379	61004
10	Dust Dept	112892	9400	9191
11				
12				
13	Total Dept Exp	2441025	203419	192357
14	" Prod Labor	1864305	155359	117063
15				
16	% Exp to Prod Labor	130%	130%	164%
17				
18				
19				
20				
21				
22				
23				
24				
25				

Packing. Each of these departments is to be charged direct from the payroll book with supervisory and non-productive wages. They should also be charged direct for repairs to equipment. The other charges which go in to make up their overheads are such items as rent, refrigeration, power, etc. The totals of these expenses are the overheads and are expressed as a percentage against the various departments' productive payroll. For example, we may find the starch (or casting) department with a monthly overhead for June of \$800 and a productive payroll of \$1,000, thereby establishing an overhead for this department of 80%. If the productive labor cost in this department is 30 cents a hundred pounds for casting Vanilla Creams, the overhead charge will be 80% of 30 cents, or 24 cents per hundred pounds.

Examples of the account sheets of two productive departments—"Hand Dipping" and "Cream and Mogul"—are shown above and on opposite page.

To work up the factory ledger it is advisable to take the total figures for the preceding year and distribute along the lines suggested above. This will give an average overhead for each department which is necessary in figuring the costs for the current year. Any anticipated

changes such as rearrangement of departments or installation of new machinery should be taken into consideration, of course, for such items affect the percentage of overhead.

Sometimes the accounts on the general books and payroll records are not divided into sufficient detail to permit working up a ledger for the preceding year. When this is the case the only thing that can be done is to reclassify the general accounts for the current year and develop the ledger as the year progresses. Under such circumstances it is necessary to estimate the various department overheads to start with and to correct these estimates in the cost records as rapidly as experience shows they are not accurate.

While the factory ledger is absolutely necessary for proper cost finding, it has other advantages, especially from the operating control point of view. Any increase in overhead is shown up immediately, together with the itemized expenses causing such increases. In a general way an executive knows that the addition of new machinery, extra floor space or more helpers increases the overhead of a department but unless it is put down on paper he has no very definite idea of just how much such increases are. It is a great advantage to know promptly when increases occur and to know the

exact cause of the increase, so that the necessary economies can be effected immediately. Such accurate knowledge gives the factory executive a remarkable feeling of security. He knows just what is going on all the time. To operate a factory without this information is a

good deal like sailing the seas without a chart or compass. Perhaps you will eventually reach port but the chances are that your competitors, with the knowledge and help of definite information, will outtail you and that when you do arrive you may be too late.

Cream and Nogul

		Year 1925	Monthly Budget	January 1926
1	Text Burden	173393	14449	15048
2	Cooking Steam	147187	12265	14856
3	Heating Steam	8546	712	834
4	Refrigeration	130641	10887	9828
5	Electric Power	24292	2024	2434
6	Machinery	219429	18287	19865
7	Gen. Factory Expense	303765	25272	23390
8				
9				
10				
11	Total Sept Exp	1006753	83896	85702
12	Prod. Labor	2013506	167732	181665
13	% Exp. to Pro. Labor	50%	50%	65%
14				
15				
16				
17				
18				
19				
20				

Chocolate Association Elects Officers

The Association of Cocoa and Chocolate Manufacturers of the United States held its annual meeting at the Hotel Pennsylvania, New York City, on Wednesday, March 10th. The following officers were elected for the ensuing year:

President—Wm. F. R. Murrie, President, Hershey Chocolate Company.

Vice-President—Wm. B. Thurber, President, Walter Baker & Company, Ltd.

Treasurer—Wm. H. Watt, Vice-President, Hooton Cocoa Company.

Secretary—Wm. K. Wallbridge, Vice-President, Peter Cailler Kohler Swiss Chocolates Co., Inc.

The following were elected to serve on the Executive Committee, together with the President and Vice-President:

B. K. Wilbur, President, H. O. Wilbur & Sons, Inc.
S. P. Goble, Vice-President, Rockwood & Company.
Louis Runkel, President, Runkel Brothers, Inc.

Wm. K. Wallbridge, Vice-President, Peter Cailler Kohler Swiss Chocolate Co., Inc.

Robt. L. Chamberlain, President, Knickerbocker Chocolate Company.



—Photo by Adrian LeRoy

Tenerif, Canary Islands

Milk venders delivering goats milk to the only chocolate factory in the islands



A Review of Current Technical Literature

of direct or indirect relationship to the confectionery industry

THE chemical press and other scientific literature of America, also of Germany, France, England, Italy and other foreign countries, contains from time to time some discussions which have an important bearing on the technical phases of the confectionery industry. The reliable scientific publications of the world are being searched each month for this material which will hereafter be digested and presented in the following form in this publication. If desired, we are in position to furnish full text and translations at clerical cost of such work.

—EDITOR.

Adulteration of Peppermint Oil. W. H. Simmons. *Perfumery Essential Oil Record*. V. 16, P. 378. Considerable variation exists in the quality of Japanese dementholized peppermint oil, not only as regards the several brands, but also between various shipments of the same brand, a difference of as much as 7 or 8% being observed. Generally speaking, it is found that as the optical rotation is reduced, the total menthol content falls. The optical rotation of these oils should rarely be below -27° . Adulteration of Japanese Peppermint Oil is again rife, a particularly bad example containing up to 45% petroleum.

Invertase.—By Richard Willstätter, Karl Schneider and Erwin Wenzel. In the *Zeitung Physiologischen Chemiker*. Method is described for obtaining a highly active invertase which may be used for inverting cane sugar in cream centers and the like.

The Use of High Carbohydrate Diets in the Treatment of Diabetes.—By W. D. Sansum, N. R. Blatherwick, and Ruth Bowden. In the *Journal of the American Medical Association*, V. 86, pp. 178-81. Even diabetics should have their share of candy! With the use of high carbohydrate diets, insulin-treated patients were kept with the urine sugar free and with a normal blood sugar. The patients were restored to a more nearly normal state of physiological and mental activity and were freed from the slightest traces of the acetone type of acidosis. The diets are more palatable and the patients lose their craving for forbidden foods.

Researches on Cacao.—1. Detection of shells and fibre. W. Plucker, Adolph Steinruck, and Frederick Starck. In *Z. Nahr. Genussm.* In the process of manufacture of cacao the use of iron apparatus may show an increase in the iron content. Methods for the detection of fibre, the use of microscopic and physical methods for the detection of shells in cacao are described.

Invertase Process in Cane Sirup Manufacture.—By H. S. Paine and C. F. Walton. Facts about sugar. V. 20, pp. 1024-1026. The treatment of cane sugar sirup with invertase is described as the most satisfactory method for preventing crystallization. The use of invertase in sirup manufacture and the method of employment are described.

Salt Water Taffy.—*Scientific American*, April, 1926, p. 284. The salt water taffy business runs into millions of dollars the year. The business recently was placed in jeopardy until the U. S. Supreme Court came to the rescue. John R. Edmiston of Wildwood, N. J., in 1923 contended that he was the originator of salt water taffy and for ten years prior to 1905 was the only one to manufacture it. The Patent Office registered "Salt Water Taffy" as a trademark. Edmiston then notified all other manufacturers of the confection to cease using the trademark and served notice that he would collect royalties on all taffy made since 1895. These royalties would have run into millions. About five hundred candy manufacturers, chiefly along the Atlantic seaboard, joined in the battle against Edmiston. It began in August, 1924. Recently the Supreme Court ruled that the term "salt water taffy" is free to everyone and cannot be registered as a trademark.

Jelly Strength of Pectin Jells.—The *Journal of Industrial Engineering Chemistry*, V. 18, pp. 89-93. The strongest jelly was obtained when one per cent pectin was used in combination with 69.44 per cent sugar; 2 per cent pectin with 66.66 per cent sugar. The optimum on pectin concentration for maximum jelly strength is .97 per cent, beyond which clouding and poor texture manifest themselves. The injury to jelly strength caused by boiling, while acid is inhibited by the addition of sugar. Increased concentration of pectin and lower temperature of boiling both increase jelly strength.

Methods of Detecting and Estimating Vanillin, Piperonal and Coumarin—By L. G. Radcliffe and E. H. Sharples. In the *Perfumery Essential Oil Record*, V. 15, pp. 396-402; V. 16, pp. 20-23, 51-52, 87-92, etc. This article presents several methods for the estimation of coumarin, examination of the properties of vanillin and piperonal, vanillin in the presence of piperonal and coumarin, vanillin or piperonal, coumarin in the presence of vanillin and piperonal, and coumarin alone.

The Extraction of Oil of Lemon—By A. A. Ramsay. In the *Agricultural Gazette of New South Wales*, V. 36, p. 705. A note on the methods of extracting oil of lemon.

The Nipa Palm as a Source of Sugar—By M. Reijgersbergh. In *Arch. Suikerind*, V. 33, pp. 1244-53. Description of the occurrence and habits of growth of this palm and methods used for tapping. About twelve thousand litres of juice containing 15 per cent sucrose is produced per acre. The juice is worked up by the usual methods for producing white plantation sugars. The difficulty in the removal of albuminoid material is overcome by first heating the raw juice to boiling, cooling and decanting, after which it is clarified and further treated as usual. The product is white and has a characteristic, agreeable flavor. The sugar yield is about fourteen hundred kilograms per acre.

The Utilization of Sweet-Corn Cobs—By G. G. Naudain. In the *American Food Journal*, V. 29, p. 508. The juice from the sweet-corn cobs contains sufficient sugar to warrant its utilization. Experiments indicate that tannin (which is present in considerable quantity) may be removed by the use of decolorizing carbon.

Rendering Soluble the Organic Constituents of Milk—By R. Vladesco. In *Lait*, V. 45, pp. 479-483. A method of rendering soluble fats and other organic constituents of milk with a view to expediting the analyses of these substances.

Freezing of Eggs—By T. Moran. In the *Proceedings of the Fourth International Congress of Refrigeration*, V. 1, pp. 122-137. When egg yolk is frozen at any temperature above "below 6° C.," on thawing it is apparently unchanged. If frozen below "below 6° C.," the yolk changes to a pasty, non-fluid condition. Egg yolk frozen at liquid air and thawed at room temperature retains its pasty condition, while if thawed rapidly it reverts to the fluid condition of fresh yolk. Eggs supercooled to any temperature above or below "below 6° C." do not suffer any apparent change. White of eggs on freezing and thawing becomes more fluid. The nature and possible theoretical explanation of these changes are discussed.

Determination of Sucrose in Condensed Milk and Chocolate—By Gunner Jorgensen. In *Ann. Fals.*, V. 18, pp. 517-29. A detailed discussion of new methods for accurately determining sugar in condensed milk and in chocolate, with the discussion of the errors in the older method.

Viscosity and Whipping Properties of Milk and Cream—By A. C. Dahlberg and J. C. Hening. In the *New York Agricultural Experiment Station, Technical Bulletin 113*. The viscosity of milk and

cream increase with aging and with increased percentages of fat. The effect of fat is most noticeable when the percentage was about 20. Pasteurization reduces the viscosity of milk and greatly reduces the viscosity of cream. The effect of aging on viscosity is inhibited to a large extent by pasteurization. The viscosity of cream may be greatly altered by the condition of the milk fat at the time the milk is separated. If the fat is in a semi-solid condition at the time of separating, the viscosity of cream from pasteurized milk resembles raw cream, but cream from raw milk was made much thicker. The whipping qualities of cream are improved by increased percentages of fat and aging. Pasteurization has a slightly detrimental effect. Well-whipped cream stored at cold temperatures remains whipped permanently with little or no drainage from the cream. In a general way, increased viscosity and decreased surface tension are associated with good whipping qualities.

Candying of Fresh Figs—By Alexander Mathew. In the *Fruit Products Journal and American Vinegar Industry*, V. 5, No. 2, P. 16-18; No. 3, P. 18-20; No. 4, 18-20. Discussion of present practices in the candying of fresh figs; essential points governing the quality of the candied product; the effect of heat; the effect of sirup concentration; rapid candying of figs under vacuum; cold storage fruit; chemical preservation; canned figs; preliminary treatment of fresh figs; comparison of sugar mixtures; open kettle concentration; plumping in final sirup; washing; drying; glacing; and packaging.

Grained Confection. By M. A. Schneller. U. S. Patent 1,551,175. Dextrose hydrate is melted together with invert sugar and sucrose or other sugars of greater solubility than the dextrose hydrate, in the presence of an amount of water not substantially greater than is desired in the final product, and the mixture is cooled and seeded with dextrose in crystal form.

Vanilla Flavor Standard. Bureau of Chemistry Bulletin. April 3, 1926. The United States Department of Agriculture, Bureau of Chemistry, announces that a standard vanilla extract and vanilla flavor must contain in each gallon the alcohol-soluble material from at least 13.35 ounces of vanilla bean in order to conform to the adapted governmental requirements.

The Preparation of Levulose (Fruit Sugar). Scientific Paper No. 519, United States Bureau of Standards. By R. F. Jackson, C. G. Silsbee and M. J. Profitt. January 12, 1926.

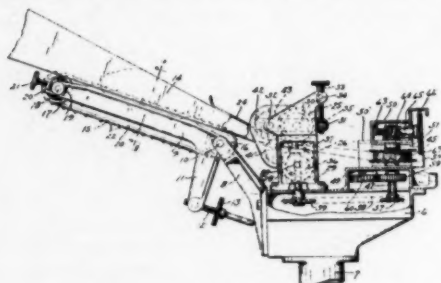
French Food Laws—From Paris Letter by Charles Lormand, Paris, France.

Two French decrees (under date of September 16, 1925) have just been issued by the French Government. They apply to the definition of Sweet Alimentary products, such as confectionery, chocolate and sirups. The substance of these decrees is to place into effect legislation akin to the American Food & Drugs Act. It is important that American exporters should have knowledge of these, especially as regards dry and preserved fruits. Among other things, the use of preservatives in all food and confections is added.

WHAT'S NEW?

New Patents

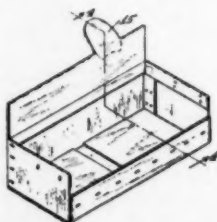
1,577,934. Candy-Ribbon-Forming Machines. Sidney Pearce, Minneapolis, Minn., assignor to J. N. Collins Company, Minneapolis, Minn., a Corporation of Minnesota. Filed Nov. 22, 1922. Serial No. 602,589. 7 Claims. (Cl. 107-12.)



7. In a machine of the kind described, the combination with ribbon-forming rollers, of a trough-like hopper for delivering plastic material to said rollers, said hopper being mounted on a horizontal pivot for vertical angular adjustments, a feed belt working through the bottom of said hopper and constituting a part of said bottom, driving and guiding wheels for said belt, one of which is journaled coincident with the axis of said hopper pivot, and a belt drive connecting one of said ribbon-forming rollers to said belt-driving wheel, and serving to drive said belt while permitting angular adjustments of said hopper.

1,577,507. Display Box. Erskine Wilder, Hubbard Woods, and Albert J. Ollendorf, Oak Park, Ill. Filed Dec. 9, 1922. Serial No. 605,964. 1 Claim. (Cl. 206-44.)

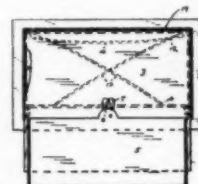
A carton for packing and displaying merchandise, comprising two blanks of sheet material and having the upper edges of its ends and its front of two thicknesses of material, each of said blanks being of substantially rectangular configuration and provided with two separated extension portions, said blanks cooperating one with another, when in assembled relation, to provide for said carton a bottom of three thicknesses of material, the body of the first of said blanks providing the back, top and a lip at the front of said carton, the extensions on said blank forming means for uniting said first blank to said second blank, and the second of said blanks having extension por-



tions and forming two layers of the bottom of said carton, the reinforced ends, and the reinforced front thereof, the extension portions of said blank overlapping the extension portions of said first blank for uniting said blanks one to another, said first blank being adapted to be folded longitudinally through the top section thereof to expose in outline an object advertising the contents of the carton, the cover section when so folded being held upright by the overlapping portions of the extensions on said second blank.

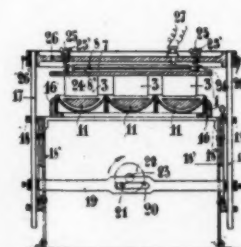
1,577,358. Candy Box. Edward W. Poppe, Milwaukee, Wis. Filed May 3, 1923. Serial No. 636,374. 2 Claims. (Cl. 206-44.)

1. In a paper box having a body, the combination with an intermediate horizontal partition in said body and having a cut away portion at the forward end of said body, of a stop secured to said partition in said cut away portion and having a lip depending from said partition, a movable container within the body and below said partition, said body having at its forward end a wall hinged to the bottom of said body, and a spring for projecting said container outwardly over said wall, said lip extending into said container for contact with the rear wall thereof, whereby movement of said container may be limited and said container may be manually manipulated about said lip for removal from said body.



1,576,936. Confectionery Machinery. Emile Louis Alfred Savy, Courbevoie, France. Filed Feb. 27, 1925. Serial No. 12,091. 9 Claims. (Cl. 107-1.)

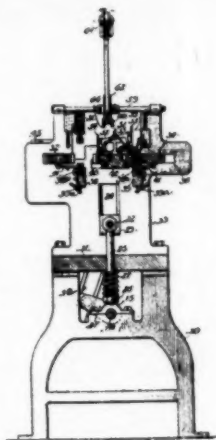
1. A confectionery machine, comprising a support for a series of moulds having cavities for the individual confections adapted to receive a coating layer; and a vertically-movable presser unit for forcing fillings into the coating layers, embodying a plate provided with depending presser fingers disposed in register with said cavities to enter the same during the descent of the unit, and means for heating said plate and fingers.



1,576,017. Candy-Molding Machine. Theodore Welsand, Chicago, Ill., assignor to Vacuum Candy Machinery Co., Waukegan, Ill., a Corporation of Illinois. Filed Apr. 18, 1921. Serial No. 462,295. Renewed July 27, 1925. 40 Claims. (Cl. 107-4.)

7. In a candy molding machine the combination of candy molding devices, means for continuously feeding candy to said molding devices, said feeding means including an endless flexible element carrying means for grasping the candy at an end to introduce the same into said molding devices.

24. In a candy molding machine the combination of a plurality of alternately operable molding devices, a reciprocable element arrangement between the molding devices, said reciprocable element being arranged to provide a rest for the candy prior to its introduction to the molding devices and having a face which cooperates to mold the candy into form having means for feeding said candy by gravity to said molding devices.

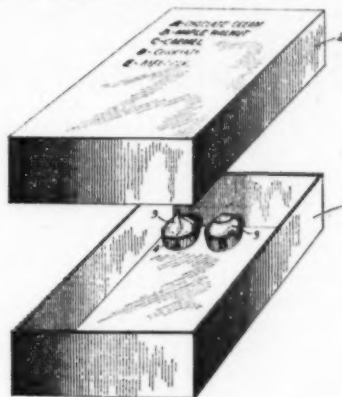


1,576,339. Method of Making Porous Candy. Philip B. Laskey, Marblehead, Mass., assignor to Chocolate Sponge Co., Inc., Brooklyn, N. Y., a Corporation of New York. Filed No. 24, 1923. Serial No. 676,756. 2 Claims. (Cl. 107-54.)



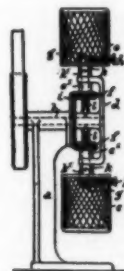
1. The process of making porous candy which consists in forming a plurality of separate longitudinal corrugated streams of candy material, pulling said streams of candy while they are separated and while the candy material forming the streams is still in a tacky condition, bringing portions of said elongated streams into adhering contact to form a cellular candy structure, and then further pulling said cellular candy structure.

1,576,026. Box of Confections. Mahlon H. Beakes, New York, N. Y. Filed May 12, 1924. Serial No. 712,501. 2 Claims. (Cl. 206-46.)



1. The combination with a box of a plurality of different candies contained within the box and packed in separate and distinct individual containers, said candies having fillings of different characteristics concealed in them, an identifying character on each container, and an index to the contents of the box comprising a list of said characters with which are associated the names of the corresponding kinds of candy.

1,576,149. Process and Apparatus for the Manufacture of Hollow Objects of Chocolate. Richard Siegt, Dresden, Germany. Filed Dec. 24, 1924. Serial No. 757,957. 5 Claims. (Cl. 107-8.)



1. A process for the manufacture of hollow bodies of chocolate-mass which consists in partly filling double-moulds with liquid chocolate-mass, inserting said filled moulds in receptacles, imparting a planetary motion to said receptacles and imparting to the latter simultaneously with said motion a springing or jumping movement.

3. In an apparatus for the manufacture of hollow bodies of chocolate-mass, in combination with double-moulds partly filled chocolate-mass, of means for receiving said filled double-moulds, means for imparting a planetary motion to the moulds mentioned and means for imparting a springing or jumping movement to said moulds during the planetary motion mentioned.



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EXPOSITION and CONVENTION
 of the
 NATIONAL CONFECTIONERS ASSOCIATION
 at CHICAGO-May 24-28-1926
 All under one roof—at New Hotel Sherman





THE MANUFACTURING CONFECTIONER'S TROUBLE CHARTS

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IX—Nougat Work

(1) Unable to Produce Short Fluffy Nougat.

- (a) Beaten too slow.
- (b) Inferior albumen.
- (c) Slow boiling.
- (d) Insufficient albumen.
- (e) Mazetta too heavy.
(too much glucose in Mazetta, or insufficient albumen, or insufficient beating will make Mazetta "heavy.")
- (f) Mazetta not suitable for Nougat.
Fluffy nougat should not be boiled as high as chewing nougat. Fluffy nougat should not be "sized" or glazed because sizing has a tendency to break down the body of the goods.

(2) Chewing Nougat Grains or Goes "Short."

- (a) Beaten too long.
- (b) Under-doctored batches.
- (c) Too much Mazetta.
- (d) Insufficient glucose in Mazetta.
- (e) Casting in warm starch.
Note.—Warm starch produces "shortness," cold starch produces "chewing qualities."
- (f) Beaten too quick.
- (g) Mixing high and low cooked batches together too quick.

(3) Nougat Goes Crumbly.

- (a) Sugar not dissolved in Mazetta.
- (b) Adding too much 4X powdered sugar to produce "shortness."
- (c) Agitators set too close to side of beater.

(4) Nougat Goes Sticky, "Runs" or "Spreads" While Waiting to Be Cut.

- (a) Too much glucose.
- (b) Batch too large for amount of albumen.
- (c) Insufficient Mazetta.
- (d) Greasy machine.
Note.—Grease or greasy machine will take the "body" out of the batch (and the candy appetite out of the consumer).
- (e) Pouring first boil too quick into beating machine.
- (f) Forcing batches through too quick.
- (g) Department too damp.

(5) Chewing Nougat Snaps or Breaks While Cutting.

- (a) Too much gelatine.
- (b) Too high boiling.
- (c) Not sufficient albumen.
- (d) Pouring batch too quick onto albumen is largely responsible for this trouble.

(6) Fruit "Sweats" in Nougat.

- (a) Adding cold fruit to warm batch.

(7) Nougat Hard to Cut.

- (a) No fat in batch.
- (b) Batch too fresh.
- (c) Boiled too high.

(8) Chewing Nougat Goes Sticky or Breaks Through Chocolate Coating.

- (a) Too much glucose.
- (b) Pouring first batch onto albumen too quick.
- (c) Boiled too high.
- (d) Insufficient evaporation (continental method).
- (e) Refrigeration too low in cooling tunnel or dipping room too cold. Resulting in contraction of chocolate too great.

Important, Dippers' Note.—Sometimes alternating the markings of chocolate dipped nougat will entirely eliminate the leaking for too much of a curl or string will bring too much chocolate from the sides, thus leaving weak sides and bottoms.

(9) Unable to Cast Nougat.

- (a) Hopper of depositor not warm enough.
- (b) Mazetta not suitable for "cast" nougat. Refer "A."
- (c) Boiled too high.
Note.—"Double" boilings will always cast better than "single" boilings.

(10) Albumen Coagulates.

- (a) Pouring batch too quick onto albumen.
- (b) Boiling too high.
- (c) Not sufficient water used for dissolving albumen.
- (d) First boiling too high.



Grand Prize Nation-Wide Candy Display Contest—Mrs. H. Johnson, 3533 W. North Avenue, Chicago, Illinois

Description of Window: This window was trimmed entirely by the above winner, and all of the paper flowers and the paper decorations were made by her.

There were 15 candy manufacturers of national reputation represented in this window

National Prize Winners in the Nation-Wide Candy Display Contest

Recent communication from V. L. Price, Pres. N. C. A.:

We regret the delay in making the national awards in connection with the Nation-Wide Candy Display Contest, which was due to delay in securing photographs and descriptions of displays of local contest winners to submit to the National Awards Committee.

The National Awards Committee were appointed on the following qualifications:

- (1) Standing in the industry.
- (2) Having personally seen none of the actual displays in the contest.
- (3) Competency to judge display and merchandising value of displays.
- (4) Representation from different sections of the country.

- (5) Absolute impartiality.

The committee consisted of the following:

Mr. W. H. Belcher, Walter M. Lowney Co., Boston.
 Mr. H. W. Hoops, Hawley & Hoops, New York.
 Mr. Fred V. Wunderle, Ph. Wunderle, Philadelphia.
 Mr. R. N. Cadle, Wm. H. Luden, Reading, Pa.
 Mr. M. McDonell, Puritan Choc. Co., Cincinnati, O.
 Mr. Howell Campbell, Standard Candy Co.
 Mr. Geo. E. Williamson, John G. Woodward & Co.

Mr. E. B. Hutchins, The Bonita Co., Fond du Lac, Wis.

It was necessary to make the awards on basis of points as the members of the committee passed upon the photographs and descriptions individually on account of being unable to meet and pass upon them collectively and because no display received a majority of votes for first place.

The result of the votes on this basis and which results were approved by the committee was as follows:

Grand Prize

Mrs. H. Johnson, Chicago, Illinois.

First Honorable Mention

Merwin Drug Co., Minneapolis, Minn.

Honorable Mention

Busath & Co., Louisville, Ky.
 Owl Drug Co., Salt Lake City, Utah.
 Schulte Drug Co., St. Louis, Mo.
 The Chocolate Shop, Rochester, N. Y.
 H. Martin Johnson Drug Co., St. Paul, Minn.
 Mueller-Potter Drug Co., Oshkosh, Wis.
 Crown Drug Co., Kansas City, Mo.
 Rorabaugh Wiley Dry Goods Co., Hutchinson, Kans.
 H. Schlumbohn, New York, N. Y.
 J. W. Schaefer, Beardstown, Ill.
 C. W. Craig, Indianapolis, Ind.



Walter P. Sharp

Walter P. Sharp, president of Stephen F. Whitman & Sons, Philadelphia, died at his home in Bryn Mawr on March 13, 1926. Mr. Sharp started with Whitman's thirty-four years ago as a clerk and worked his way to the presidency.

The house of Whitman was founded in 1842 and, while it had gained considerable prestige as a maker of quality confections, the distribution was confined to a few surrounding states until Mr. Sharp organized for national distribution. Mr. Sharp was admitted to partnership with Horace S. Whitman, son of the founder, at the beginning of 1904 and began at once to plan the great development which he lived to see carried through successfully. Under his management the business was revolutionized. The selling of bulk goods was gradually eliminated until the entire output was packed in sealed and trade-marked packages for resale to the public. The great system of protected retail sales agencies was built up, covering every state and nearly every community in the country. The standards of quality always maintained by the Whitman's was carried still higher under Mr. Sharp's leadership.

He built up a country-wide organization with the key men in all positions tied to the company by stock ownership. The Whitman traditions of quality and integrity have been enriched under Mr. Sharp's leadership by ideals of employee welfare, sanitation and progressive manufacturing methods.

Maffucci Bros. & Co., Montclair, New York. Capital, \$50,000. Incorporators: Michale Maffucci, Vito Maffucci, Anthony Maffucci.

Crystal Confectionery, Inc., Winchester, Va. Capital stock, \$10,000 to \$50,000. Incorporators: John Sempeles, president; Steven Yeatras, secretary; Lillian Gempes and Stella Yeatras.

Charms Company Buys New Plant

7 Acres with 100,000 Sq. Ft. of Floor Space

FOR the exclusive manufacture of Charms and Charm Pops, the Charms Company has just acquired more than 100,000 square feet of additional manufacturing space, with the purchase of a modern factory building in Newark, N. J.

The Charms Company is the largest manufacturer of fruit flavored hard candies in the United States and has for several years operated their present plant twenty-four hours a day.

They have always pursued the policy of specialization, concentrating their efforts on creating a demand on a few specialties. The volume production made possible by concentrating on these specialties has put them in position to offer a better and more uniform product of the highest quality.

The "Eleven Luscious Flavors" were originally put on the market in the 5-cent package of Charms Fruit Tablets. They were immediately popular. Distribution spread rapidly into every state in the Union. For several years the company gave its entire attention to this one product. Encouraged by the reception given their fruit tablets, the company decided to use these same flavors in the manufacture of Charm Pops. They began five years ago with the 5-cent Charm Pop. The response was immediate. Other numbers followed rapidly and there is now a complete line of Charm Pops in retail prices from 1 cent to 5 cents, and including many novelty shapes and wrappings.

In 1924 the Charms Company manufactured 125,000,000 Charm Pops. In 1925 their production exceeded 175,000,000 Pops. Their distribution extends over the United States. They anticipate their sale will reach the quarter billion mark for 1926.

In developing the pop business the Charms Company perfected much of its own machinery and the present Charm Pop machine is claimed to be not only faster and more economical than machines offered on the market, but makes a product absolutely uniform in size and shape.

The new plant is excellently well suited to the manufacture of tandy and by its convenient location is suited also for the shipping and receipt of raw materials. The property comprises seven acres. It has 840 feet of frontage on one of the main arteries of travel in Newark and runs to a depth of 470 feet. The plant is served with a private industrial siding.

The building itself is a one-story, modern steel and concrete structure. Large metal sash windows extend the entire length of the building on both sides. The roof is of saw-tooth construction, with metal sash windows admitting the light from above. The entire floor space is flooded with sunlight, which is of immense help in providing the necessary sanitary conditions to successfully manufacture a food product.

The Charms Company is going forward at once with work on adapting the building to its use. When the plant is in operation the windows will be closed at all times. The air will be exhausted by blowers and replaced by washed air from the air conditioned apparatus. This air conditioning system, which is also in effect in the present plant of the Charms Company, is a further sanitary safeguard and insures a high quality and uniform product, which has proven its ability to stand up in all climates.

Mr. Walter W. Reid, Jr., organized the Charms Company twelve years ago and has been largely responsible for its success. He is still the guiding hand and President of the company.

The other officers are: Mr. K. G. Harr, Vice-President and Sales Manager; Mr. R. L. Grey, Treasurer.

Directors: Mr. John Leicht, Puritan Ice Cream Co.; Mr. Guthrie B. Plante, Attorney, Morris, Plante & Saxe; Mr. Edward A. Schmidt, President, Northwestern National Bank; Mr. A. A. Kotzen, Treasurer, Rose Lithographic Corporation; Mr. A. S. Dutcher, First Vice-President, Wood & Selick; Mr. A. J. Roscelli, Credit Manager, Wood & Selick; Mr. R. W. Krout, Works Manager, Charms Company.

NEW INCORPORATIONS.

Metropolitan Candy Co., 955 Fillmore, San Francisco, Calif.

Centennial Candy Company, Wilmington, Delaware; capital, \$100,000.

My Candy Co., Inc., Wilmington, Delaware; capital, \$100,000.

Arrow Confectionery, Muncie, Ind.; capital, \$25,000. J. A. Bowman and Lewis C. Mendenhall, incorporators.

Donaldson Chocolate Co., Kansas City, Mo. Capital, \$100,000.

The C. and S. Candy Co., Cumberland, Md. Incorporators: Wm. L. Sherman, Chas. B. Conley and Sarah V. Sherman. Capital, \$25,000.

Walker-Boston Chocolate Co., Boston, Mass. capital, 500 no par value shares; incorporators, Byron L. Walker and Edward B. Havey, Jr., and Henrietta H. Walker.

Lennon Brothers Candy Company, Detroit, Mich. Capital, \$15,000.

Meyer's Confectionery, Inc., 24 Branford Place, Newark, N. J. Capital, \$125,000.

Alpine Candy Corp., Newark, N. J. Incorporators: Hattie K. Finkelstein, Francis Goodwin, Jr., Max Winant. Capital, \$100,000.

May-Belle Candy Co., Inc., Brooklyn, N. Y. Incorporators: Richard Steel, Albert Blumenstiel, Ralph K. Jacobs, 536 4th St., Brooklyn, N. Y. Capital, \$5,000.

Seymour Candy Company, Inc., Brooklyn, N. Y. Incorporators: Seymour, Jennie and Alex. Beetz, 4101 Tenth Ave., Brooklyn. Capital, \$35,000.

C. S. Allen Corp., New York. Capital, 500 shares \$100 each, 1,000 common no par. Incorporators: J. W. Drake, J. H. Amen, R. N. West.

I. Repetti Confectionery Co., Inc., New York City. Capital, \$10,000. Incorporators: Frank Russo, 505 Fifth Ave., Irene Bertolacci and Akron Ferreri.

Waverly Candy Corp., New York City. Increased its capital stock from \$10,000 to \$15,000.

W. H. Baker, Inc., Red Hook, N. Y. Capital, 2,500 shares no par value. Incorporators: Edward Y. Baker, 100 Hudson St., New York City; Peter H. Troy and Tracy Dows.



Photo Chicago Daily News

Lest They Be Fidgety

Above—Evelyn Gorges of Northwestern University enjoying lollipop, while woman barber cuts her hair. Below—Cecilia Dahlke, another student, sucks on stick of candy, while waiting for barber to shout "Next!"

"Hippity-hop, to the barber shop, to get a stick of candy." That's what Northwestern University co-eds are doing.

At an Evanston barber shop where girls go to have their shingles regulated they are given lollipops. This consideration is just for good behavior, the barbers explained.

The candy is given to co-eds who don't suddenly jump when the electric clippers send chills down their spines or quickly turn around to glimpse a handsome profile that is party to a shave in the next white chair.—*Chicago Daily News.*

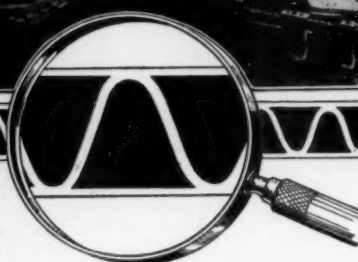
H. O. Wilbur & Sons, Inc., have again engaged the services of Mr. A. B. Brubaker, who formerly distributed their chocolate products through the New England territory. Mr. Charles W. Pryor will represent Wilbur's in the State of Ohio, part of Michigan, New York State, etc.

Mr. M. G. Bardwe'l has succeeded Burgess and Bardwell as Atlanta representatives of the Atlantic Gelatine Co. in the southern territory. His address is 311 Wynne-Claughton Bldg., Atlanta, Ga.

Vacuum Candy Machinery Co. have moved their general offices and factory from Waukegan, Ill., to 4737 Ravenswood avenue, Chicago.



The strength and endurance of the Elizabeth Bridge over the Danube River, Budapest, is largely due to its two great arches which support tremendous weight and neutralize constant vibration.



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Manufacturers whose goods yield but a narrow margin of profit must necessarily keep a watchful eye on the entire process of manufacture from raw material to consignee. Small, seemingly unimportant, wastes here and there will soon multiply into a grand total unless met and blocked by efficiency methods.

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